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VERIZON PATENT MANAGEMENT GROUP 1515 N. COURTHOUSE ROAD SUITE 500 ARLINGTON, VA 22201-2909			EXAMINER AGWUMEZIE, CHARLES C	
			ART UNIT 3621	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/627,033	<b>Applicant(s)</b> GAVAN ET AL.	
	<b>Examiner</b> Charlie C. Agwumezie	<b>Art Unit</b> 3621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-33 and 35-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-33, and 35-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>03/14/05; 07/24/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 5, 2007 has been entered.

### **Status of Claims**

2. Claims 4, and 34 are previously cancelled.

Claims 1, and 28, are amended.

Claims 1-3, 5-33, 35-66 are pending in this application per the request for continued examination filed on April 5, 2007.

### ***Terminal Disclaimer***

3. The terminal disclaimer filed on February 7, 2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Gavan et al U.S. Patent No. 7,117,191 B2 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Response to Arguments***

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4. Applicant's arguments filed on February 7, 2007 have been fully considered but they are not persuasive.

With respect to independent **claim 1**, Applicant argues that Bowman and Phelps, whether taken alone or in any reasonable combination, do not disclose or suggest the combination of features recited in claim 1. For example, Bowman does not disclose or suggest a method for detecting fraud in one of a credit card or debit card system, determining whether the system is a credit card system or a debit card system, or performing at least one fraud detection test on the network event records based on the determination of whether the system is a credit card system or a debit card system, as required by claim 1. Instead, Bowman discloses a fraud detection system for detecting and preventing fraudulent use of communications or credit card/business networks (col. 2, lines 45-47). Indeed, the words "debit card" do not appear in Bowman. Nowhere does Bowman disclose or remotely suggest a method for detecting fraud in one of a credit card or debit card system, determining whether the system is a credit card system or a debit card system, or performing at least one fraud detection test on the network event records based on the determination of whether the system is a credit card system or a debit card system, as required by claim 1.

In response, Examiner respectfully disagrees and submits that Bowman and Phelps, taken together discloses all the features of the claimed invention as recited in independent claim 1. Even by the Applicant's recitation of the cited portions of Bowman, it is clear that Bowman does disclose the features that Applicant argues are not disclosed. For example Bowman discloses that event detected include call details

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records from wireline, digital and analog cellular communication networks, or credit card usage and authorization records.... Yet Applicant argues that nowhere does Bowman disclose or suggest a method for detecting fraud in one of a credit card or debit card system determining whether the system is a credit card system or a debit card system, or performing at least one fraud detection test on the network event records based on the determination of whether the system is a credit card system or a debit card system, as required by claim 1. This line of argument is flawed because it is clear that Bowman discloses the claimed features. Furthermore it is not necessary that the word "debit card" appear in Bowman because the claim limitation is on the alternative. However, even if the limitation is not in the alternative, it would still be obvious to one of ordinary skill in the art because credit card and debit card use the same network for authorization purposes.

Applicant further argues that Bowman does not disclose or suggest performing at least one fraud detection test on the network event records based on the determination of whether the system is a credit card network or a debit card system.

In response, Examiner disagrees and submits that Bowman, in addition to the discussion above does disclose a screening means by which call event records are screened. A screening is a test applied to one field in a call event. Bowman's Fraud Management System support variety of types of screening including list , range , pattern etc. Thus Bowman discloses the claimed limitation as shown in the rejections.

Applicant further argues that Phelps does not disclose correlating fraud alarms based on common aspects of the fraud alarms, the correlated fraud alarms being

consolidated into a fraud case, the fraud case being assigned a priority based on a severity of the suspected fraud and responding to the fraud case with a fraud prevention action, the fraud prevention action being based on the priority assigned to the case.

In response, Examiner respectfully disagrees with Applicant characterization of Phelps invention. The portion of Phelps recited by the Applicant does clearly disclose the claimed limitation. For example Phelps discloses that alerts are generated based on pattern of use and/or exceeding threshold. The indication is a case that is generated from the alert and assigned a priority. The case is resolved by a set of expert system rules or a researcher and network 12 acts on resolution. Thus it is clear from the Applicant's recited portions of Phelps that the claimed limitations are disclosed therein.

Applicant further argues that Phelps does not disclose responding to the fraud case with a fraud prevention action, the fraud prevention action being based on the priority assigned to the case.

In response, please see the preceding discussion.

Applicant further argues that the Examiner failed to provide a proper motivation to combine Bowman and Phelps.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in

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the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

To this end, the Examiner recognizes that references cannot be arbitrarily altered or modified and that there must be some reason why one skilled in the art would be motivated to make the proposed modifications. Although the motivation or suggestion to make modifications must be articulated, it is respectfully submitted that there is no requirement that the motivation to make modifications must be expressly articulated within the references themselves. References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures, *In re Bozek*, 163 USPQ 545 (CCPA 1969). The Examiner is concerned that the Applicant apparently ignores the mandate of the numerous court decisions supporting the position given above. The issue of obviousness is not determined by what the references expressly state but by what they would reasonably suggest to one of ordinary skill in the art, as supported by decisions in *In re De/isle* 406 Fed 1326, 160 USPQ 806; *In re Kell, Terry and Davies* 208 USPQ 871; and *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988) (citing *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)).

In the instant case, the Examiner respectfully notes that each and every motivation to combine the applied references is accompanied by select portions of the respective references which specifically support that particular motivation. As such, it is NOT seen that the Examiner's combination of references is unsupported by the applied prior art of record. Rather, it is respectfully submitted that explanation based on the logic and scientific reasoning of one ordinarily skilled in the art at the time of the invention

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that support a holding of obviousness has been adequately provided by the motivations and reasons indicated by the Examiner, *Ex pane Levengood 28 USPQ 2d 1300 (Bd. Pat. App. & Inter., 4/22/93)*. The Examiner stated that the motivation was because of security by ensuring that cases with high priority or severity level are given adequate attention and proper resolution (both Bowman and Phelps disclose detecting fraudulent network usage pattern and methods of resolutions (see abstracts of both arts)).

Applicant further argues that Examiner's purported motivation to combine is based on impermissible hindsight.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

With respect to claims 28-33 and 35-66, Applicant argues that Bowman and Phelps, whether taken alone or in any reasonable combination, do not disclose or suggest the combination of features recited in claim 28.

In response, Examiner refers Applicant to the preceding discussions since the arguments presented are basically the same.



***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 28**, is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman U.S.

Patent Application No. 5,627,886.

As per **claim 28**, Bowman discloses a system for monitoring one or more of a plurality of credit card or debit card networks, each network being configured to generate network event records, each network event record being generated in response to an event occurring in the network, the system comprising:

a fraud detection system including a core computing infrastructure (configurable software for configuring the disparate networks) and a domain specific infrastructure (configurable software or object oriented software for defining user specific data/rules), the domain specific infrastructure being dynamically reconfigurable in accordance with the domain specific implementation of the network being monitored, the core computing infrastructure being non-domain specific (configurable software for disparate networks), the fraud detection system being configured to analyze each network event record and perform a fraud prevention action in response to detecting an occurrence of fraud in the

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network event record and based on whether the network is a credit card network or debit card network (fig. 2; col. 2, lines 40-67; col. 3, lines 5-40; ...credit card/network...).

Bowman failed to explicitly disclose the key phrases "core computing infrastructure", "domain specific infrastructure." However examiner have interpreted the phrases as shown in the brackets above. If the interpretation is correct then it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate a security system comprising core computing infrastructure, domain specific infrastructure in order to show detailed implementation of the fraud detection system. If the interpretation is not correct, then the phrase is subject to multiple interpretations and Applicant is required to clearly define what the phrases represent.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-3, 5-27, 29-33, and 35-66**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman U.S. Patent Application No. 5,627,886 in view of Phelps U.S. Patent No. 5,602,906.

As per claim 1, Bowman discloses a method for detecting fraud in one of a credit card or debit card system, the system generating network event records, each network event record being generated in response to an event in the system, the method comprising the steps of:

(1) performing at least one fraud detection test on the network event records based on whether the system is a credit card system or a debit card system (see fig. 2; col. 2, lines 15-25, 40-50; col. 3, line 60-col. 4, line 5; col. 17, lines 1-10...detecting network usage pattern indicative of fraud...credit card usage and authorization records...);

(2) generating a fraud alarm upon detection of suspected fraud by the at least one fraud detection test (col. 2, lines 10-15, 25-40; col. 4, lines 25-35; col. 5, lines 35-45; ...alarm generation...).

What Bowman does not explicitly teach is

(3) correlating fraud alarms based on common aspects of the fraud alarms, the correlated fraud alarms being consolidated into a fraud case, the fraud case being assigned a priority based on a severity of the suspected fraud; and

(4) responding to the fraud case with a fraud prevention action, the fraud prevention action being based on the priority assigned to the fraud case.

Phelps discloses

(3) correlating fraud alarms based on common aspects of the fraud alarms, the correlated fraud alarms being consolidated into a fraud case, the fraud case

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being assigned a priority based on a severity of the suspected fraud (col. 2, lines 30-40; col. 2, line 63-col. 3, line 5; col. 4, lines 40-50); and

(4) responding to the fraud case with a fraud prevention action, the fraud prevention action being based on the priority assigned to the fraud case (col. 2, lines 30-40; col. 2, line 63-col. 3, line 5).

Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate the method of (3) correlating fraud alarms based on common aspects of the fraud alarms, the correlated fraud alarms being consolidated into a fraud case, the fraud case being assigned a priority based on a severity of the suspected fraud; and (4) responding to the fraud case with a fraud prevention action, the fraud prevention action being based on the priority assigned to the fraud case in view of the teachings of Phelps in order to ensure that cases with high priority or severity level are given adequate attention and proper resolution.

As per claims 2 and 32, Bowman further discloses the method, wherein the method is performed by computer executable instructions disposed on at least one computer readable medium (fig 2).

As per claims 3 and 33, Bowman further discloses the method, wherein the computer executable instructions are distributed among a plurality of hardware

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platforms (fig. 2; col. 1, lines 45-60; col. 2, lines 25-40; ...detecting and monitoring disparate networks...).

As per **claim 5**, Bowman further discloses the method, wherein at least a portion of the computer executable instructions are implemented in a core infrastructure (fig. 1; network backbone connecting disparate networks as in fig. 1).

As per **claim 6**, Bowman discloses the method, wherein the at least one fraud detection test includes the step of normalizing the network event record such that the network event records conforms to a predetermined format (col. 7, lines 5-15).

As per **claims 7 and 37**, Bowman further discloses the method, wherein the at least one fraud detection test includes the step of enhancing the network event record such that an enhanced network event record includes data obtained from at least one external system (fig. 3; col. 6, lines 30-50; ...data incoming for fraud analysis...).

As per **claim 8**, Bowman further discloses the method, wherein the enhanced network event record includes data obtained from at least one database (fig. 2; col. 4, lines 50-60; ...RDBMS...primary database to store and maintain profile data etc...).

As per **claim 9**, Bowman further discloses the method, wherein the at least one database includes at least one of a configuration database, an event database, a billing database, a call history database, and/or a records database (fig. 2; col. 6, lines 5-30).

As per **claims 10 and 35**, Bowman further discloses the method, wherein the at least one fraud detection test includes a comparison of at least a portion of the network event records to a threshold rule, the alarm being generated if one network event record violates the threshold rule (col. 2, lines 25-40; compares statistics ...to predefined thresholds and responds with an alarm...).

As per **claims 11 and 44**, Bowman further discloses the method, wherein the alarm is generated if a value in one network event record exceeds a threshold value specified by the threshold rule (col. 2, lines 25-40; compares statistics ...to predefined thresholds and responds with an alarm...).

As per **claim 12**, Bowman further discloses the method, wherein the alarm is generated if a value in the network event record does not equal a value specified by the threshold rule (col. 2, lines 25-40; compares statistics ...to predefined thresholds and responds with an alarm...).

As per **claim 13**, Bowman further discloses the method, wherein the at least one fraud detection test includes a comparison of at least a portion of the network event

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record to a profile detection rule, the alarm being generated if the network event record violates the profile detection rule (col. 2, lines 25-40; compares statistics ...to predefined thresholds and responds with an alarm...).

As per **claim 14**, Bowman further discloses the method, wherein the network event record is compared to a normal usage profile (col. 15, lines 40-65).

As per **claim 15**, Bowman further discloses the method, wherein the network event record is compared to a fraudulent usage profile (col. 15, lines 40-65).

As per **claim 16**, Bowman discloses the method, wherein the profile detection rule is based on historical network event records (col. 9, lines 10-35).

As per **claim 17**, Bowman further discloses the method, wherein the at least one fraud detection test includes a comparison of at least a portion of the network event record to a predetermined pattern to identify a normal usage and/or a fraudulent usage (col. 15, lines 40-65).

As per **claim 18**, Bowman further discloses the method, wherein the predetermined pattern is based on call history data (col. 2, lines 40-50; ...usage pattern...).

As per **claim 19**, Bowman failed to explicitly disclose the method, wherein the predetermined pattern is generated by a neural network. Bowman however discloses that the system not only solves known fraud problems but also unknown fraud patterns.

Phelps further discloses the method, wherein the predetermined pattern is generated by a neural network (col. 1, lines 15-20).

Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate method, wherein the predetermined pattern is generated by a neural network in view of the teachings of Phelps in order to ensure that system solves unforeseen cases of fraud by learning unknown patterns of fraud.

As per **claim 20**, Bowman further discloses the method, wherein the comparison is performed using tree-based algorithms that generate discrete output values (col. 7, lines 30-35).

As per **claim 21**, Bowman further discloses the method, wherein the comparison is performed using statistical based algorithms that that employ iterative numerical processing techniques (col. 7, lines 30-35).

As per **claim 22**, Bowman further discloses the method, wherein the step of correlating includes the step of enhancing a network event record by obtaining relevant



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data from an external source (fig. 3; col. 6, lines 30-50; ...data incoming for fraud analysis...).

As per claim 23, Bowman further discloses the method, wherein the step of correlating includes the step of applying at least one predetermined fraud analysis rule to the network event record to decide if a fraud case is appropriate (col. 13, lines 10-40).

As per claim 24, Bowman failed to explicitly disclose the method, wherein the step of correlating includes the step of applying at least one predetermined prioritization rule to the fraud case to obtain the priority of the fraud case.

Phelps discloses the method, wherein the step of correlating includes the step of applying at least one predetermined prioritization rule to the fraud case to obtain the priority of the fraud case (col. 1, lines 45-60).

Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate the method wherein the step of correlating includes the step of applying at least one predetermined prioritization rule to the fraud case to obtain the priority of the fraud case in view of the teachings of Phelps in order to ensure that cases with high priority or severity level are given adequate attention and proper resolution.

As per claim 25, Bowman failed to explicitly disclose the method, wherein the fraud prevention action may be performed automatically, semi-automatically, or manually based on the priority.

Phelps discloses the method, wherein the fraud prevention action may be performed automatically, semi-automatically, or manually based on the priority (fig. 2; col. 5, lines 60-67).

Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate the method wherein the fraud prevention action may be performed automatically, semi-automatically, or manually based on the priority in view of the teachings of Phelps in order to ensure that cases with high priority or severity level are given adequate attention and proper resolution.

As per claims 26 and 65, Bowman failed to explicitly disclose the method, wherein the fraud prevention action is selected from a group that is comprised of at least one of a card deactivation, a usage modification, an account deactivation, a range modification, and/or a privilege modification.

Phelps further discloses the method, wherein the fraud prevention action is selected from a group that is comprised of at least one of a card deactivation, a usage modification, an account deactivation, a range modification, and/or a privilege modification (col. 1, lines 45-60; col. 4, lines 1-10; col. 5, lines 5-20).

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Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate the method wherein the fraud prevention action is selected from a group that is comprised of at least one of a card deactivation, a usage modification, an account deactivation, a range modification, and/or a privilege modification in view of the teachings of Phelps in order to show the various method employed to archive resolution.

As per **claim 27 and 66**, Bowman failed to explicitly disclose the method, wherein the alarm is selected from a group that is comprised of at least one of a pin hacking alarm, or a geographic alarm. However, Bowman does teach that the system responds with an alarm when a threshold is met or exceeded.

Phelps also failed to explicitly designate its alarm as either pin hacking alarm or geographic alarm. Phelps teaches that an alert is generated when the threshold is exceeded. The threshold is dependent on the geographic dispersion of call origination point.

Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate the method wherein the alarm is selected from a group that is comprised of at least one of a pin hacking alarm, or a geographic alarm in order to show the type of alarm designated or used.

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As per claim 29, Bowman further discloses the system, wherein the fraud detection system is dynamically reconfigured to adjust fraud detection rules in accordance with changing patterns of fraud (col. 3, lines 5-15; ...detects new types of fraud...).

As per claim 30, Bowman further discloses the system, wherein the fraud detection system further comprises:

a detection element coupled to the telecommunication system, the detection element being configured to generate a fraud alarm if the network event record is in violation of a predetermined fraud detection rule (col. 2, lines 25-40; compares statistics ...to predefined thresholds and responds with an alarm...);

an analysis element configured to receive fraud alarms from the detection element, the analysis element being configured to correlate fraud alarms having common aspects, and generate a fraud case based on correlated fraud alarms (col. 2, lines 25-40; compares statistics ...to predefined thresholds and responds with an alarm...).

What Bowman does not explicitly teach is

an expert element coupled to the analysis element, the expert element being configured to apply at least one predetermined expert rule to assign a priority to the fraud case, the expert element performing a fraud prevention action in accordance with the priority.

Phelps discloses an expert element coupled to the analysis element, the expert element being configured to apply at least one predetermined expert rule to assign a priority to the fraud case, the expert element performing a fraud prevention action in accordance with the priority (col. 5, line 50-col. 6, line 25).

Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate the system wherein an expert element coupled to the analysis element, the expert element being configured to apply at least one predetermined expert rule to assign a priority to the fraud case, the expert element performing a fraud prevention action in accordance with the priority in view of the teachings of Phelps in to ensure that cases with highest priority is treated according to its priority or severity level.

As per claim 31, Bowman failed to explicitly disclose the system, wherein the priority is based on a severity of suspected fraud.

Phelps further discloses the system, wherein the priority is based on a severity of suspected fraud (col. 4, lines 1-10).

Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate the method wherein the priority is based on a severity of suspected fraud in view of the teachings of Phelps in order to ensure that cases with high priority or severity level are given adequate attention and proper resolution.

As per **claim 36**, Bowman further discloses the system, wherein the rules based thresholding engine further comprises:

at least one rules database (fig. 2; col. 6, lines 30-35);

a normalizer configured to configure the network event record in a standardized format (col. 7, lines 5-15; col. 8, lines 50-65; col. 9, lines 40-50);

an enhancer component coupled to the normalizer, the enhancer component being configured to insert additional data in the network event record (col. 16, lines 40-55); and

a threshold detector coupled to the enhancer component, the threshold detector being configured to compare a network event record to at least one threshold rule obtained from the at least one rules database, whereby the alarm is generated if the network event record violates the at least one threshold rule (col. 2, lines 25-40; compares statistics ...to predefined thresholds and responds with an alarm...).

As per **claim 38**, Bowman further discloses the system, wherein the network event record includes an event key and at least one feature, the event key identifying the network event and the at least one feature including event measurement data (col. 2, lines 25-40).

As per **claim 39**, Bowman further discloses the system, wherein the measurement data includes a count of a number of occurrences of an event during a predetermined time period (col. 15, lines 55-65; col. 16, lines 40-65).

As per **claim 40**, Bowman further discloses the system, wherein the measurement data includes a count of a number of like events occurring simultaneously (col. 16, lines 40-60).

As per **claim 41**, Bowman further discloses the system, wherein the measurement data includes geographic velocity data (col. 16, lines 60-65).

As per **claim 42**, Bowman further discloses the system, wherein the at least one database comprises:

an enhancement rules database coupled to the enhancer component, the enhancer component obtaining an enhancement rule from the enhancement rules database based on data in the network event record (fig. 2 and 3; col. 2, lines 40-64; "...including necessary billing information ..."); and

a threshold detection rules database coupled to the threshold detector, the threshold detector obtaining a threshold rule in accordance with data in the network event record (fig. 2; col. 2, lines 25-40).

As per **claim 43**, Bowman further discloses the system, wherein the enhancement rule directs the enhancer component to select external data from a selected external source (fig. 3; col. 6, lines 30-50; "...data incoming for fraud analysis...").

As per **claim 45**, Bowman further discloses the system, wherein the threshold rule stipulates that an alarm is generated when data in the network event record does not equal a threshold value (col. 2, lines 25-40; compares statistics ...to predefined thresholds and responds with an alarm...).

As per **claim 46**, Bowman further discloses the system, wherein the enhancer component provides the threshold detector with a feature vector, the feature vector including the event key and a plurality of feature event values, the event key including suspected fraud event identifying data, each feature event value of the plurality of feature event values providing fraud event measurement data (col. 2, lines 25-40).

As per **claim 47**, Bowman further discloses the system, wherein the feature event value includes a threshold value (col. 2, lines 25-40).

As per **claim 48**, Bowman further discloses the system, wherein the feature vector includes a name field, a value field, and a generating event field for each feature (col. 5, line 60-col. 5, line 5; ...event record is a collection of data fields...).

As per **claim 49**, Bowman further discloses the system, wherein the feature vector is implemented as a data structure, the data structure being stored on a computer readable medium (col. 3, lines 15-25).



As per **claim 50**, Bowman further discloses the system, wherein the feature vector includes at least one contributing event field for each feature (col. 5, line 60-col. 5, line 5).

As per **claim 51**, Bowman further discloses the system, wherein the at least one software processing engine in the detection element further comprises:

a profiling database including at least one profile detection rule (fig. 2; col. 4, lines 50-60); and

a profiling engine configured to compare the network event record with at least one profile in accordance with the at least one profile detection rule, the profiling engine generating the alarm if the network event record substantially violates the profile detection rule (fig. 2; col. 2, lines 25-40).

As per **claim 52**, Bowman further discloses the system, wherein the profile includes a normal use profile and/or a fraudulent use profile (col. 4, lines 50-60).

As per **claim 53**, Bowman further discloses the system, wherein the profile is based on historical network event records (col. 2, lines 10-15).

As per **claim 54**, Bowman further discloses the system, wherein the at least one software processing engine in the detection element comprises a pattern recognition

engine configured to identify normal and/or fraudulent patterns of usage (col. 8, lines 50-65).

As per **claim 55**, Bowman further discloses the system, wherein the pattern recognition engine compares the network event record to call history data obtained from a call history database (col. 8, lines 50-65; col. 9, lines 10-35).

As per **claim 56**, Bowman further discloses the system, wherein the pattern recognition engine includes a neural network configured to identify fraudulent patterns of usage (col. 8, lines 50-65).

As per **claim 57**, Bowman further discloses the system, wherein the pattern recognition engine includes tree-based algorithms (col. 7, lines 30-35).

As per **claim 58**, Bowman further discloses the system, wherein the pattern recognition engine includes statistical based algorithms that that employ iterative numerical processing techniques (col. 7, lines 30-35).

As per **claim 59**, Bowman further discloses the system, wherein the analysis element further comprises:

an external systems interface component configured to obtain data from external systems relevant to the fraud alarms (fig. 2 and 3);

a configuration database configured to specify any additional data required for fraud alarm analysis (fig. 2);

an alarm enhancement component coupled to the external systems interface and the configuration database, the alarm enhancement component being configured to add the additional data and external system data to the fraud alarm (fig. 3; col. 6, lines 30-45); and

a fraud case builder component coupled to the alarm enhancement component, the fraud case builder being configured to correlate and consolidate fraud alarms (col. 10, line 10-25, 40-55).

As per **claim 60**, Bowman further discloses the system, wherein the fraud case builder is coupled to a rules database, the rules database providing the fraud case builder with parameters for generating fraud cases (col. 10, line 10-25, 40-50).

As per **claim 61**, Bowman further discloses the system, wherein the expert element further comprises:

a configuration database configured to specify any additional data required for alarm analysis based on an alarm configuration (fig. 2);

an external systems interface component configured to obtain data from external systems relevant to at least one of the alarms (fig. 3);

a prioritizer component coupled to the configuration database and the external systems interface, the prioritizer being configured to direct the external system

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interface to obtain the additional data from at least one external system based on configuration data obtained from the configuration database, the prioritizer adding the additional data to the fraud case (fig. 3; col. 6, lines 20-30...obtains additional data at least from billings and according to customer selected criteria...).

What Bowman does not explicitly disclose is prioritizer.

Phelps discloses a prioritizer (col. 4, lines 1010)

Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate the method wherein there is a prioritizer component in view of the teachings of Phelps in order to ensure that cases are prioritized according to severity level so that adequate attention and proper resolution is given to such cases.

As per **claim 62**, Bowman failed to explicitly disclose the system, wherein the prioritizer component receives prioritization rules from the configuration database and prioritizes the fraud cases in accordance with the prioritization rules.

Phelps further discloses the system, wherein the prioritizer component receives prioritization rules from the configuration database and prioritizes the fraud cases in accordance with the prioritization rules (col. 4, lines 1010).

Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate the method wherein the prioritizer component receives prioritization rules from the configuration database and prioritizes the fraud cases in accordance with the prioritization in view of

the teachings of Phelps in order to ensure that cases are prioritized according to severity level so that adequate attention and proper resolution is given to such cases.

As per **claim 63**, Bowman failed to explicitly disclose the system, wherein the prioritization rules specify the fraud prevention action.

Phelps further discloses the system, wherein the prioritization rules specify the fraud prevention action (col. 5, lines 5-20; col. 6, lines 1-25).

Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate the method wherein the prioritization rules specify the fraud prevention action in view of the teachings of Phelps in order to ensure that cases are prioritized according to severity level so that adequate attention and proper resolution is given to such cases.

As per **claim 64**, Bowman failed to explicitly disclose the system, further comprising an enforcement component coupled to the prioritizer component, the enforcement component performing the fraud prevention action based on the enhanced fraud case.

Phelps further discloses the system, further comprising an enforcement component coupled to the prioritizer component, the enforcement component performing the fraud prevention action based on the enhanced fraud case (col. 5, lines 5-20; col. 6, lines 1-25).

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Accordingly it would have been obvious to one of ordinary skill in the art at time of applicant's invention to modify the method of Bowman and incorporate the system, further comprising an enforcement component coupled to the prioritizer component, the enforcement component performing the fraud prevention action based on the enhanced fraud case in view of the teachings of Phelps in order to ensure that cases are prioritized so that adequate attention and proper resolution is given to such cases.

### ***Conclusion***

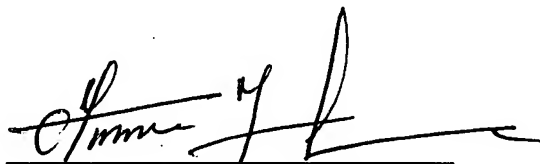
**Examiner's Note:** Examiner has cited particular columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that the applicant, in preparing the responses, fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Charles C. Agwumezie** whose number is **(571) 272-6838**. The examiner can normally be reached on Monday – Friday 8:00 am – 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Andrew Fischer** can be reached on **(571) 272 – 6779**.

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